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|---------------------------------|-------------|----------------------|---------------------|------------------|
| APPLICATION NO.                 | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/591,877                      | 10/10/2006  | Max Braun            | 14558-00001-US      | 4477             |
| 23416                           | 7590        | 11/17/2008           | EXAMINER            |                  |
| CONNOLLY BOVE LODGE & HUTZ, LLP |             |                      | VALENROD, YEVGENY   |                  |
| P O BOX 2207                    |             |                      | ART UNIT            | PAPER NUMBER     |
| WILMINGTON, DE 19899            |             |                      | 1621                |                  |
| MAIL DATE                       |             | DELIVERY MODE        |                     |                  |
| 11/17/2008                      |             | PAPER                |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                   |
|------------------------------|--------------------------------------|-----------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/591,877 | <b>Applicant(s)</b><br>BRAUN, MAX |
|                              | <b>Examiner</b><br>YEVEGENY VALENROD | <b>Art Unit</b><br>1621           |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 August 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 13-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 13-20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application<br>Paper No(s)/Mail Date _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

**DETAILED ACTION**

The following is a non-final office action in the application 10/591,877. Said application has been transferred to Examiner Valenrod whose contact information is provided at the end of this document.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/28/08 has been entered.

Remarks and declaration by Dr. Max Braun (the Braun Declaration)under 37 CFR 1.132 have been fully considered by the Examiner. Applicants' arguments are not sufficient to overcome the rejection of record. Text of the rejection is repeated below followed by Examiner reply to the Remarks and the Braun Declaration.

***Claim Rejections - 35 USC 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1621

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paleta et al. (Collection Czechoslov. Chem. Commun., 35, 1970, 1304-1305), in view of Cordier et al. (US 6,509,495).

The instant claims are drawn to a hydrodehalogenation process for preparing an ester of the formula R1CFHC(O)OR2 or a diester of the formula R3OC(O)CFHC(O)OR3 from a CF<sub>n</sub>X<sub>2</sub>C(O) group and zinc, in an alcohol solvent, where X is chlorine. The instant claims are also drawn to the azeotrope of methyl difluoroacetate and methanol with a constant boiling point of 64°C at ambient pressure.

Paleta et al. teaches a hydrodehalogenation method of preparing the ester, methyl difluoroacetate, from methyl difluorobromoacetate and zinc in methanol, and then further purifying the methanolic filtrate by fractional distillation (page 1304, last two lines; page 1305, first paragraph). The acid chloride can also be used as a reactant in the hydrodehalogenation reaction (page 1303, compound IIIa and IV).

The Examiner takes the position that since Paleta et al. distills methyl difluoroacetate in methanol (page 1305, first paragraph, line 4), the formation of an azeotrope of methyl difluoroacetate and methanol is inherent in the distillation process. In reference to the limitation that the azeotrope has a constant boiling point of 64°C at ambient pressure, since the boiling point is an inherent property of the azeotrope, this limitation would also be met by Paleta et al. since the boiling point is inseparable from the component structures of the azeotrope.

Paleta et al. is deficient in the sense that X is bromine, not chlorine for the CF<sub>n</sub>XC(O) group reactant.

Cordier et al. teaches the equivalency of bromine and chlorine for a halogen-substituted reactant in a hydrodehalogenation reaction (abstract; column 4, lines 31-36). Therefore, it would be *prima facie* obvious to one of ordinary skill in the art at the time of the invention, to utilize the teaching of Cordier et al., for the substitution of chlorine for bromine on the reactant of Paleta et al. There is no showing of unusual and/or unexpected results over applicant's particular chlorinated reactant. The expected result is the hydrodechlorination of methyl difluorochloroacetate to produce methyl difluoroacetate, a valuable intermediate for the chemical industry.

***Reply to applicants remarks and the Braun Declaration***

In paragraphs 5 and 6, Dr Braun describes the difference in bond energies of a C-Cl bond and a C-Br bond. Examiner agrees that the bond energies between the two bonds are different. However, Cordier et al. teaches equivalency of bromine and

chlorine in hydrodehalogenation reaction (see above). One skill in the art would expect both bromine and chlorine to be reactive in the process of Paleta. Unexpected results arising from the use of bromine in a side by side comparison can be used to overcome this argument.

In paragraphs 7, 8 and 9 of the Braun declaration, Dr. Braun points to results which are presented as unexpected results. Examiner disagrees with assertion of Dr. Braun that the increase in yield in the applicant's hydrodebromination when compared to Paleta's hydrodechlorination is an unexpected result. On pages 1304-1305 Paleta et al describe preparation of Methyl Difluoroacetate (IV) in 47% isolated yield. Applicant has compared that example to an example in paragraph 7 of the Declaration where Methyl Difluoroacetate is obtained in 74% isolated yield. This is not found persuasive because the experiments are not side by side comparisons. Paleta refluxed the reaction for 1 hr. (see page 1305, line 1), while applicant has refluxed for 4 hours (see page 2 of the declaration, last line). Furthermore, from the examples provided in the specification Page 4, Table 1), when applicant's hydrodechlorination is refluxed for 1 hr, the crude yield is 55.9% when 1.5 eq of zinc is used. This is not considered unexpected in view of 47% of isolated yield reported by Paleta.

### ***Conclusion***

Claims 13-20 are pending.

Claims 13-20 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yevgeny Valenrod whose telephone number is 571-272-9049. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yevgeny Valenrod/

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